



Attorney Docket No.: 0492611-0545/MIT9277 CONII

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Seleznev, *et al* Examiner: Cooke

Serial No.: 10/799,388 Art Unit: 1754

Filing Date: March 12, 2004

Title: VACUUM PROCESSING FOR FABRICATION OF SUPERCONDUCTING THIN FILMS FABRICATED BY METAL-ORGANIC PROCESSING

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**DECLARATION UNDER 37 C.F.R. 1.131**

I, Michael J. Cima, Ph.D., declare as follows:

1. I am an inventor of the subject matter disclosed and claimed in United States Patent Application Serial No. 10/799,388 ("the '388 application"), filed March 12, 2004, and entitled "Vacuum Processing For Fabrication Of Superconducting Thin Films Fabricated By Metal-Organic Processing". This application claims priority to U.S. Patent Application No. 10/194,561, filed July 13, 2002, and to United States provisional patent application Serial No. 60/305,407, filed on July 13, 2001.

2. This Declaration is presented for the purpose of removing from consideration by the Examiner a paper by Solovyov, et al., entitled "*Ex-situ* Post-deposition Processing for Large Area  $Y_1Ba_2Cu_3O_7$  Films and Coated Tapes", IEEE Transactions on Applied Superconductivity, 11(1) 2939-2942 (2001) (hereinafter, "Solovyov"). The paper first became available to the public on April 24, 2001. The present Declaration is presented in accordance with In re Stompel, 113 U.S.P.Q. 77 (CCPA 1957) and establishes conception and reduction to practice of the invention in this country before April 24, 2001.

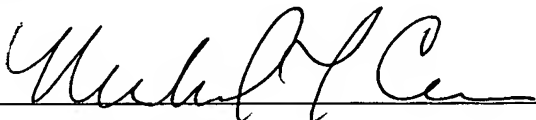
3. While Solovyov bears notations indicating that it was published in March, 2001, I understand, as a result of reviewing the Declaration under 37 C.F.R. § 1.132 of Valarie Rosen, that Solovyov was first published on April 24, 2001.

4. The inventors of the claimed subject matter of the '388 application are Igor Seleznev and Michael J. Cima.

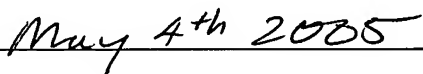
5. On a date before April 24, 2001, Igor Seleznev and I conceived and reduced to practice our invention of a method for vacuum processing for fabrication of superconducting thin films fabricated by metal-organic processing.

6. Exhibit 1 is a copy of pages 68-69 from the laboratory notebook of Igor Seleznev, with dates blacked out. Exhibit 1 provides evidence of conception and actual reduction to practice of the claimed invention prior to April 24, 2001. In particular, page 68 includes a description of the conversion of a metal oxyfluoride film in a processing gas having a total pressure less than atmospheric pressure. Page 68 has four photomicrographs of a sample prepared using the techniques of the invention. Four copies are included to show each of the photomicrographs. Page 69 is an x-ray diffraction spectrum showing the presence of an oxide superconductor in a sample prepared using the techniques described on page 68. The notes were prepared in the United States of America. The originals of these two pages bear dates prior to April 24, 2001.

7. All statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful, false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful, false statements may jeopardize the validity of the application or any patents issued thereon.

A handwritten signature in cursive script, appearing to read "Michael J. Cima", written over a horizontal line.

Michael J. Cima, Ph.D.

A handwritten date "May 4th 2005" written in cursive script over a horizontal line.

Date



60

Instructor's Name

Pictures of the sample prepared in vacuum at 80 GPa.

Water was introduced after 10 minutes ~~end~~ of heating segment at controller at approx 40°C in the furnace

ZSX NLS 11.2.29 t.t. 2 unaltered

[illegible]

750x Vacuum  $\neq$ ! NG 11229  $\neq$  2

sample was made at 72.5 °C, 80+hrs  
total pressure, load ppl amt of O<sub>2</sub>

18-25 minutes at  $\frac{1}{2}$

Student's Name

Date

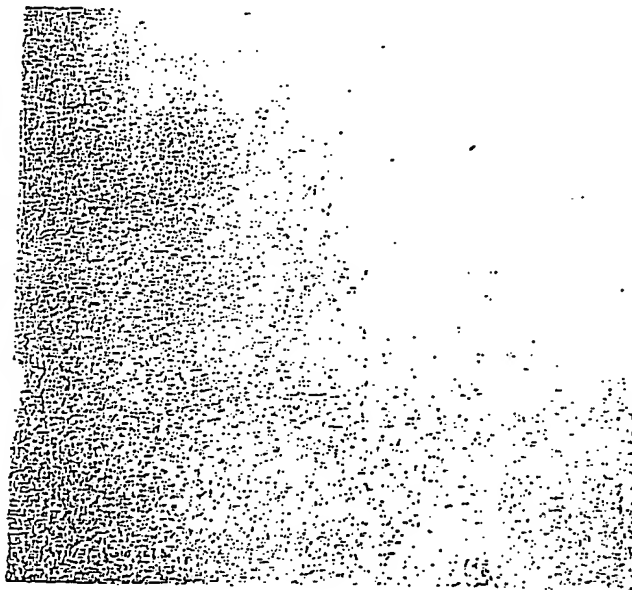
Subject

Instructor's Name

Pictures of the sample prepared in vacuum at 80 torrs.

Water was introduced after 10 minutes ~~end~~ of heating segment at controller at approx 400 in the furnace.

150X MG 11229 #2  
unlabeled #1  
[10] → from a corrosion surface



750X vacuum #1 MG 11229 #2

sample was made at 725 °C 80 torrs  
some pressure, 1000 ppm air of O<sub>2</sub>

18-25 minutes at 400

Student's Name

Date

68

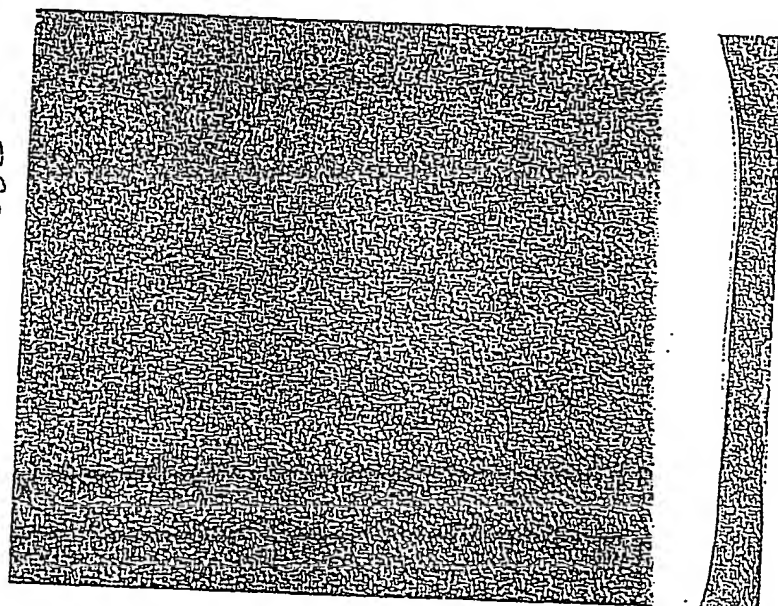
Subject

Instructor's Name

Pictures of the sample prepared in vacuum at 80 torrs.

Water was introduced after 10 minutes ~~end~~ of heating segment at controller at approx 40°C in the furnace.

750X VACUUM #1  
NG 11229 #2  
FURNACE



750X VACUUM #1 NG 11229 #2

sample was made at 725°C, 80 torrs  
total pressure, 1000 ppm of O<sub>2</sub>

18-25 minutes at 40°C

Student's Name

Date

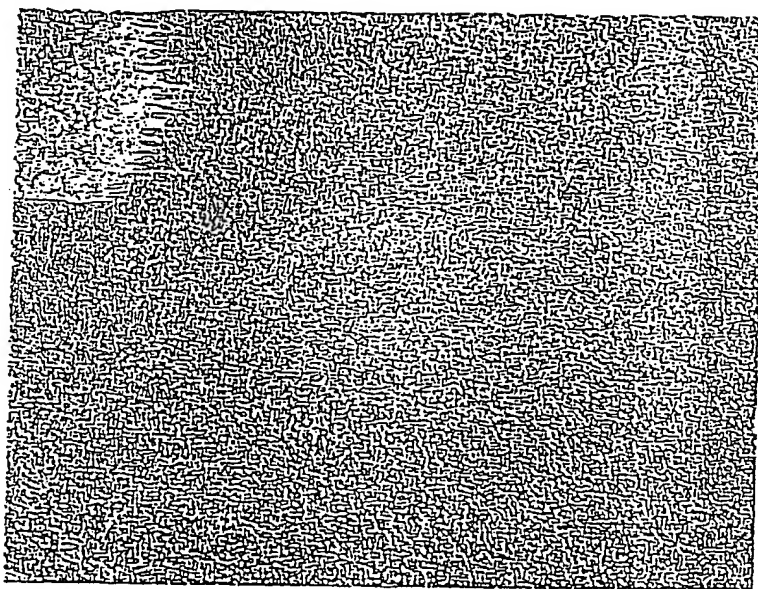
68

Subject

Instructor's Name

Pictures of the sample prepared in vacuum at 80 torrs.

Water was introduced after 10 minutes ~~end~~ of heating segment at controller at approx 400°C in the furnace.



750X vacuum #1 MG 11229#2

sample was made at 775°C, 80-torrs  
some pressure, 1000 pp4 and of O<sub>2</sub>

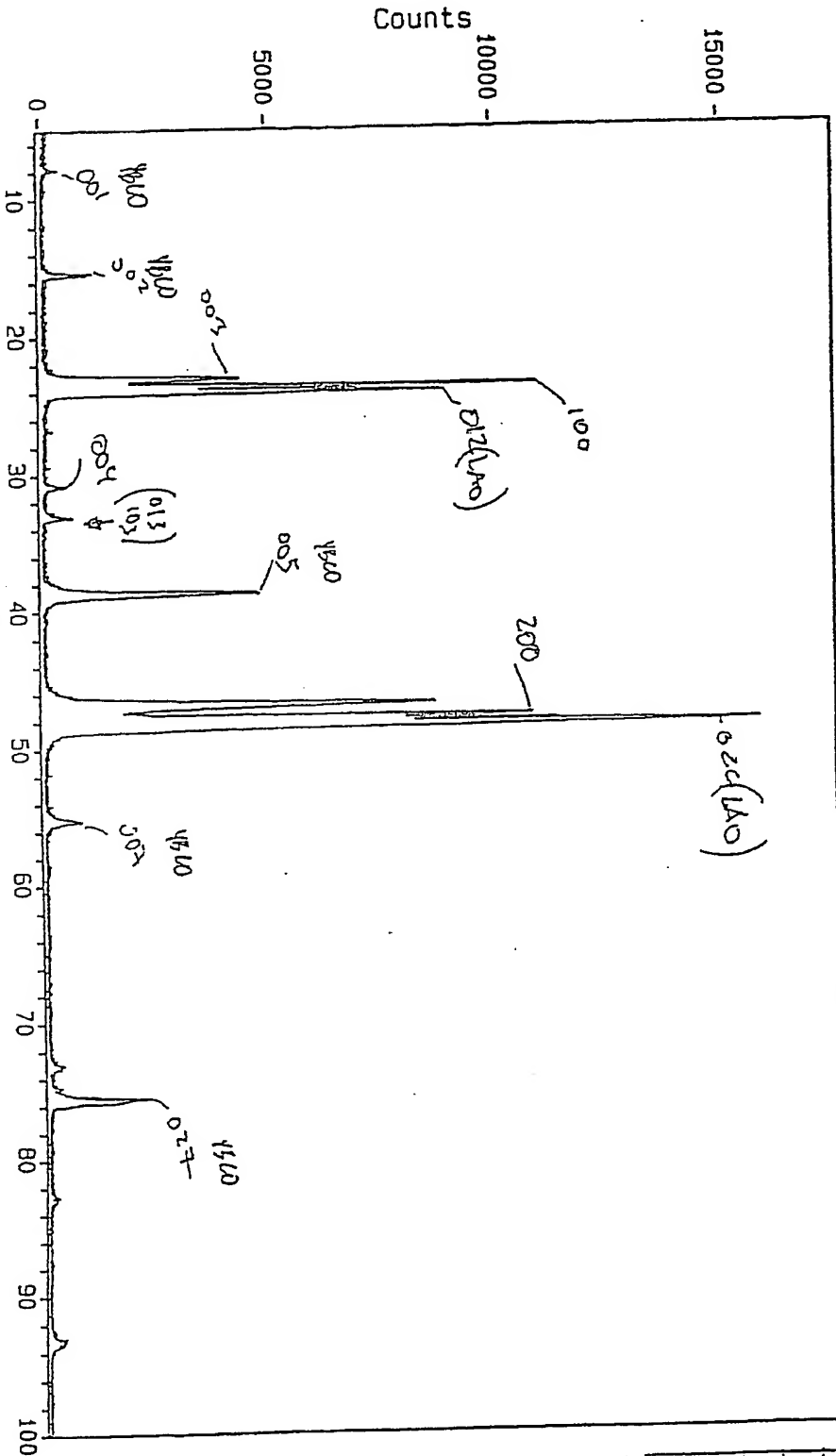
18-25 minutes at 400°C

Student's Name

DATA

ID: L020700#4 VACUUM\_3 50\_MINUTES, 2009:51

File: Z05523.RAW Scan: 5-100/.02/ 1/#4751, Anode: CU



1> 39-0486: Ba2Cu3Y06.8 - Barium Copper Yttrium Oxide

2> 31-0022: LaAlO3 - Aluminum Lanthanum Oxide